

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE J		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 0004		3. EFFECTIVE DATE 25-Feb-2004		4. REQUISITION/PURCHASE REQ. NO. W68MD9-3295-4333		5. PROJECT NO.(If applicable)	
6. ISSUED BY USA ENGINEER DISTRICT, SEATTLE ATTN: CENWS-CT 4735 EAST MARGINAL WAY SOUTH SEATTLE WA 98134-2329		CODE W912DW		7. ADMINISTERED BY (If other than item 6) See Item 6		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)				<input checked="" type="checkbox"/> 9A. AMENDMENT OF SOLICITATION NO. W912DW-04-R-0007			
				<input checked="" type="checkbox"/> 9B. DATED (SEE ITEM 11) 27-Jan-2004			
				10A. MOD. OF CONTRACT/ORDER NO.			
				10B. DATED (SEE ITEM 13)			
CODE		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input checked="" type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) TITLE: DESIGN BUILD ELECTRICAL UPGRADE, HOWARD HANSON DAM, WASHINGTON 1. This amendment (0004) provides for the following changes:							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				TEL: _____ EMAIL: _____			
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)		16C. DATE SIGNED 25-Feb-2004	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES


AMENDMENT FOUR

1. Proposal due date is extended to March 5, 2004 at 2:00 p.m. local time.
2. Revisions to drawings by notation in the Special Contract Requirements after the Index of RFP Drawings (Section 00800, Attachment A).
3. Revisions to Section 00890, Outline Specifications (revised Section 02316 Excavation, Trenching, and Backfilling for Utility Systems).
4. Revision to Section 00800, Special Contract Requirements
5. Revision SF 1442, Proposal due date.
6. The attached revised specification sections supersede and replace the corresponding specification sections. Specification changes are generally identified, for convenience, by strikeout for deletions, and underling for text additions. All portions of the revised or new pages shall apply whether or not changes have been indicated.
7. For bidder inquiries go to www.projenet.org.
8. NOTICE TO OFFERORS: Offerors must acknowledge receipt of this amendment by number and date on offer or by telegram. Please mark outside of envelope in which your office is enclosed to show amendment received.

Encl:

Revision Section 00800
Revision 00800, Attachment A
Revision section 00890
Revision SF 1442

(End of Summary of Changes)

SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair)		1. SOLICITATION NUMBER W912DW-04-R-0007	2. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	3. DATE ISSUED 2 February 2004	PAGE OF PAGES 1
IMPORTANT - The "offer" section on the reverse must be fully completed by the offeror.					
4. CONTRACT NUMBER		5. REQUISITION/PURCHASE REQUEST NUMBER W68MD9-3295-4333		6. PROJECT NUMBER	
7. ISSUED BY Seattle District, Corps of Engineers ATTN: CENWS-CT-CB-CU PO Box 3755 Seattle, WA 98124-3755		CODE W912DW	8. ADDRESS OFFER TO Seattle District, Corps of Engineers PO Box 3755 ATTN: CENWS-CT-CB-CU Seattle, WA 98124-3755 HAND CARRY: Seattle District Corps of Engineers Contracting Division 4735 East Marginal Way South Seattle, WA 98134-2329		
9. FOR INFORMATION CALL 		A. NAME See Information Page inside Front Cover		B. TELEPHONE NUMBER (Include area code) (NO COLLECT CALLS) See Information Page inside Front Cover	

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying number, date):

Furnish all labor, materials and equipment and perform all work for Design Build Electrical Upgrade, Howard Hanson Dam, Washington in accordance with the attached Contract Clauses, Special Clauses, Technical Specifications and Drawings.

NOTE: Award will be made pursuant to the Small Business Competitive Demonstration Program

11. The Contractor shall begin performance within 10 calendar days and complete it within _____ calendar days after receiving

☐ award, ☒ notice to proceed. This performance period is ☒ mandatory, ☐ negotiable. (See * Paragraph SC-1, 00800 .)

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE PAYMENT BONDS?
(If "YES," indicate within how many calendar days after award in Item 12B.)

☒ YES ☐ NO

12B. CALENDAR DAYS

10

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 5 copies to perform the work required are due at the place specified in Item 8 by 2:00 p.m. (hour) local time 5 March 2004 (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelope containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☒ is, ☐ is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 120 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)

15. TELEPHONE NUMBER (Include area code)

Fax No.:

16. REMITTANCE ADDRESS (Include only if different than Item 14)

Tax ID No:

DUNS No:

eMail:

CODE

FACILITY CODE

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. (Insert any number equal or greater than the minimum requirement stated in 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.)

AMOUNTS



See Page 00010-5

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGEMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NO.

DATE

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)

20B. SIGNATURE

20C. OFFER DATE

AWARD (To be completed by Government)

21. ITEMS ACCEPTED

22. AMOUNT

23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN
(4 copies unless otherwise specified)

ITEM

26

25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO

☐ 10 U.S.C. 2304(c) ()☐ 41 U.S.C. 253(c) ()

26. ADMINISTERED BY

CODE

27. PAYMENT WILL BE MADE BY

USACE - Seattle District
Northwest Area Office
PO Box 92146
Tillicum, WA 98492-0146

US Army Corps of Engineers Finance Center
CEFC-AO-P
5722 Integrity Drive
Millington, TN 38054-500

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE☐ 28. NEGOTIATED AGREEMENT (Contractor is required to sign this

document and return _____ copies to the issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.

☐ 29. AWARD. (Contractor is not required to sign this document.) Your offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN
(Type or print)

31A. NAME OF CONTRACTING OFFICER (Type or print)

SHARON GONZALEZ

30B. SIGNATURE

30C. DATE

31B. UNITED STATES OF AMERICA

31C. AWARD DATE

BY

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SPECIAL CONTRACT REQUIREMENTS

SC-1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984) (FAR 52.211-10).

The Contractor shall be required to (a) commence work under this Contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 150 calendar days after date of receipt by Contractor of notice to proceed. The time stated for completion shall include final cleanup of the premises.

SC-2. LIQUIDATED DAMAGES - CONSTRUCTION (SEP 2000) (FAR 52.211-12)

(a) If the Contractor fails to complete the work within the time specified in the Contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of \$629.00 for each day of delay.

(b) If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

(c) If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

SC-3 TIME EXTENSIONS

Notwithstanding any other provisions of this Contract, it is mutually understood that the time extensions for changes in the work will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the Contract completion date will be extended only for those specific elements so delayed and that the remaining Contract completion dates for all other portions of the work will not be altered and may further provide for an equitable readjustment of liquidated damages under the new completion schedule.

SC-4. DELETED

SC-5. INSURANCE - WORK ON A GOVERNMENT INSTALLATION (JAN 1997) (FAR 52.228-5)

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance period of this Contract at least the kinds and minimum amounts of insurance required in the Insurance Liability Schedule or elsewhere in the Contract.

(b) Before commencing work under this Contract, the Contractor shall certify to the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective:

(1) for such period as the laws of the State in which this Contract is to be performed prescribe;
or

(2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this Contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the Contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

(d) Insurance Liability Schedule (FAR 28.307-2)

(1) Workers' compensation and employer's liability. Contractors are required to comply with applicable Federal and State workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy, except when Contract operations are so commingled with a Contractor's commercial operation that it would not be practical to require this coverage. Employer's liability coverage of at least \$100,000 shall be required, except in states with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.

(2) General Liability.

(a) The Contracting Officer shall require bodily injury liability insurance coverage written on the comprehensive form of policy of at least \$500,000 per occurrence.

(b) Property damage liability insurance shall be required only in special circumstances as determined by the agency.

(3) Automobile liability. The Contracting Officer shall require automobile liability insurance written on the comprehensive form of policy. The policy shall provide for bodily injury and property damage liability covering the operation of all automobiles used in connection with performing the Contract. Policies covering automobiles operated in the United States shall provide coverage of at least \$200,000 per person and \$500,000 per occurrence for bodily injury and \$20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.

(4) Aircraft public and passenger liability. When aircraft are used in connection with performing the Contract, the Contracting Officer shall require aircraft public and passenger liability insurance. Coverage shall be at least \$200,000 per person and \$500,000 per occurrence for bodily injury, other than passenger liability, and \$200,000 per occurrence for property damage. Coverage for passenger liability bodily injury shall be at least \$200,000 multiplied by the number of seats or passengers, whichever is greater.

(5) Environmental Liability. If this contract includes the transport, treatment, storage, or disposal of hazardous material waste the following coverage is required.

The Contractor shall ensure the transporter and disposal facility have liability insurance in effect for claims arising out of the death or bodily injury and property damage from hazardous material/waste transport, treatment, storage and disposal, including vehicle liability and legal defense costs in the amount of \$1,000,000.00 as evidenced by a certificate of insurance for General, Automobile, and Environmental Liability Coverage. Proof of this insurance shall be provided to the Contracting Officer.

SC-6. CONTINUING CONTRACTS (EFARS 52.232-5001) (MAR 1995):

(a) This is a continuing contract, as authorized by Section 10 of the River and Harbor Act of September 22, 1922 (33 U.S. Code 621). The payment of some portion of the contract price is dependent upon reservations of funds from future appropriations, and from future contribution to the project having one or more non-federal project sponsors. The responsibilities of the Government are limited by this clause notwithstanding any contrary provision of the "Payments to Contractor" clause or any other clause of this contract..

(b) The sum of \$ 300,000 has been reserved for this contract and is available for payments to the Contractor during the current fiscal year. It is expected that Congress will make appropriations for future fiscal years from which additional funds together with funds provided by one or more non-federal project sponsors will be reserved for this contract..

(c) Failure to make payments in excess of the amount currently reserved, or that may be reserved from time to time, shall not entitle the Contractor to a price adjustment under the terms of this contract, except as specifically provided in paragraphs (f) and (i) below. No such failure shall constitute a breach of this contract, except that this provision shall not bar a breach-of-contract action if an amount finally determined to be due as a termination allowance remains unpaid for one year due solely to a failure to reserve sufficient additional funds therefore.

(d) The Government may at any time reserve additional funds for payments under the contract if there are funds available for such purpose. The Contracting Officer will promptly notify the Contractor of any additional funds reserved for the contract by issuing an administrative modification to the contract.

(e) If earnings will be such that funds reserved for the contract will be exhausted before the end of any fiscal year, the contractor shall give written notice to the Contracting Officer of the estimated date of exhaustion and the amount of additional funds which will be needed to meet payments due, or to become due, under the contract during that fiscal year. This notice shall be given not less than 45 nor more than 60 days prior to the estimated date of exhaustion.

(f) No payments will be made after exhaustion of funds except to the extent that additional funds are reserved for the contract. The Contractor shall be entitled to simple interest on any payment that the contracting officer determines was actually earned under the terms of the contract and would have been made except for exhaustion of funds. Interest shall be computed from the time such payment would otherwise have been made until actually or constructively made, and shall be at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41, 85 STAT 97, as in effect on the first day of the delay in such payment.

(g) Any suspension, delay, or interruption of work arising from exhaustion or anticipated exhaustion of funds shall not constitute a breach of this contract and shall not entitle the contractor to any price adjustment under the "Suspension of Work" clause or in any other manner under this contract.

(h) An equitable adjustment in performance time shall be made for any increase in the time required for performance of any part of the work arising from exhaustion of funds or the reasonable anticipation of exhaustion of funds.

(i) If, upon the expiration of sixty (60) days after the beginning of the fiscal year following an exhaustion of funds, the Government has failed to reserve sufficient additional funds to cover payments otherwise due, the contractor, by written notice delivered to the Contracting Officer at any time before such additional funds are reserved, may elect to treat his right to proceed with the work as having been terminated. Such a termination shall be considered a termination for the convenience of the Government.

(j) If at any time it becomes apparent that the funds reserved for any fiscal year are in excess of the funds required to meet all payments due or to become due the contractor because of work performed and to be performed under the contract during the fiscal year, the Government reserves the right, after notice to the contractor, to reduce said reservation by the amount of such excess.

SC-7. PERFORMANCE OF WORK BY THE CONTRACTOR (APR 1984) (FAR 52.236-1): The Contractor shall perform on the site, and with its own organization, work equivalent to at least fifteen percent (15%) of the total amount of work to be performed under the Contract. The percentage may be reduced by a supplemental agreement to this Contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government.

SC-8. PHYSICAL DATA (APR 1984) (FAR 52.236-4): Data and information furnished or referred to below is for the Contractor's information. The Government will not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) Physical Conditions: The indications of physical conditions on the drawings and in the specifications are the result of site investigations by test holes shown on the drawings.

(b) Weather Conditions: Each bidder shall be satisfied before submitting his bid as to the hazards likely to arise from weather conditions. Complete weather records and reports may be obtained from any National Weather Service Office.

(c) Transportation Facilities: Each bidder, before submitting his bid, shall make an investigation of the conditions of existing public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress at the jobsite. The unavailability of transportation facilities or limitations thereon shall not become a basis for claims for damages or extension of time for completion of the work.

(d) Right-of-Way: The right-of-way for the work covered by these specifications will be furnished by the Government, except that the Contractor shall provide right-of-way for ingress and egress across private property where necessary to gain access to the jobsite. The Contractor may use such portions of the land within the right-of-way not otherwise occupied as may be designated by the Contracting Officer. The Contractor shall, without expense to the Government, and at any time during the progress of the work when space is needed within the right-of-way for any other purposes, promptly vacate and clean up any part of the grounds that have been allotted to, or have been in use by, him when directed to do so by the Contracting Officer. The Contractor shall keep the buildings and grounds in use by him at the site of the work in an orderly and sanitary condition. Should the Contractor require additional working space or lands for material yards, job offices, or other purposes, he shall obtain such additional lands or easements at his expense.

SC-9. DELETED.

SC-10. LAYOUT OF WORK (APR 1984) (FAR 52.236-17): The Contractor shall lay out its work from Government-established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due, or to become due, to the Contractor.

SC-11. THROUGH SC-13. DELETED.

SC-14. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE (MAY 1999)-
(EFARS 52.231-5000)

(a) This clause does not apply to terminations. See 52.249-5000, Basis for Settlement of Proposals and FAR Part 49.

(b) Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractor at any tier shall be based on actual cost data for each piece of equipment or groups of similar serial and series for which the Government can determine both ownership and operating costs from the contractor's accounting records. When both ownership and operating costs cannot be determined for any piece of equipment or groups of similar serial or series equipment from the contractor's accounting records, costs for that equipment shall be based upon the applicable provisions of EP 1110-1-8, Construction Equipment Ownership and Operating Expense Schedule, Region VIII. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the contracting officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiations shall apply. For retroactive pricing, the schedule in effect at the time the work was performed shall apply.

(c) Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36. Rates for equipment rented from an organization under common control, lease-purchase arrangements, and sale-leaseback arrangements, will be determined using the schedule, except that actual rates will be used for equipment leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees.

(d) When actual equipment costs are proposed and the total amount of the pricing action exceeds the small purchase threshold, the contracting officer shall request the contractor to submit either certified cost or pricing data, or partial/limited data, as appropriate. The data shall be submitted on Standard Form 1411, Contract Pricing Proposal Cover Sheet.

(e) Copies of EP1110-1-8 "Construction Equipment Ownership and Operating Expense Schedule" Volumes 1 through 12 are available in Portable Document Format (PDF) and can be viewed or downloaded at <http://www.usace.army.mil/inet/usace-docs/eng-pamphlets/cecw.htm>. A CD-ROM

containing (Volumes 1-12) is available through either the Superintendent of Documents or Government bookstores. For additional information telephone 202-512-2250, or access on the Internet at http://www.access.gpo.gov/su_docs.

SC-15. PAYMENT FOR MATERIALS DELIVERED OFF-SITE (MAY 1999)-(EFARS 52.232-5000)

(a) Pursuant to FAR clause 52.232-5, Payments Under Fixed Priced Construction Contracts, materials delivered to the contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the General Provisions are fulfilled. Payment for items delivered to locations other than the work site will be limited to:

(1) materials required by the technical provisions; or (2) materials that have been fabricated to the point where they are identifiable to an item of work required under this contract.

(b) Such payment will be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items in the prime contractor and including the value of material and labor incorporated into the item.

SC-16. ORDER OF PRECEDENCE - DESIGN/BUILD CONTRACT

(a) The contract includes the standard contract clauses and schedules current at the time of contract award. It entails (1) the solicitation in its entirety, including all drawings, cuts, and illustrations and any amendments, and (2) the successful offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted which in any way bears upon the terms of that agreement.

(b) In the event of conflict or inconsistency between any of the provisions of this contract, including the Request for Proposal, Contractor's proposal, or contract deliverable, precedence shall be given in the following order:

(1) Betterments: Any portions of the accepted proposal, or any subsequent design or other submittal, which both conform to and exceed the provisions of the Request for Proposal. "Betterment" is defined as any product, component, or system, which exceeds the minimum requirements stated in the Request for Proposal.

(2) The provisions of the solicitation, including drawings and attachments.

(3) All other provisions of the accepted proposal including RFP Standard Form SF 1442 and Schedule.

(4) Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc. These are "deliverables" under the contract and must conform to or exceed all provisions of the contract, in order of precedence herein.

SC-17. LIMITATION OF PAYMENT FOR DESIGN: If it should be necessary to terminate this contract, for any reason, prior to completion, the Government will pay the Contractor a fair and reasonable price for the design or construction services performed and delivered to the Government. However, such payment will not exceed a sum greater than the amount allowable under 10 USC 4540 regardless of the actual costs the Contractor may be able to substantiate.

SC-18. REQUEST FOR PROPOSAL (RFP) DRAWINGS AND SPECIFICATIONS

(a) The Government--

(1) Will provide the successful Contractor, without charge, one set of RFP drawings (CALS format) and one set of RFP specifications, except publications incorporated into the technical provisions by reference, in electronic format on a compact disk. The Government will not give the Contractor any hard copy paper drawings or specifications for any contract resulting from this solicitation.

(2) Will provide the Contractor a CD-ROM containing editable RFP CADD file drawings (file format and general CADD requirements are defined in Section 01702 AS BUILT RECORDS AND DRAWINGS) for use in preparation of design drawing deliverables.

(b) The RFP drawings are identified in the index of drawings attached at the end of the Special Contract Requirements (Attachment A).

SC-19. DELETED.

SC-20. COMPLIANCE CERTIFICATION

The offeror shall certify, in the technical proposal cover letter and by note on each sheet of working drawings, that all items submitted in proposal and final design documents comply with RFP requirements. The requirements specified in the RFP are binding contract requirements. In case of any conflicts after the contract award between the requirements stated in the RFP and the offeror's proposal, the RFP requirements shall govern.

SC-21. VALUE ENGINEERING: The Corps of Engineers encourages all offeror's to utilize the Value Engineering methodology and functional analysis techniques. These techniques will most often result in a quality and cost effective product.

SC-22. EPA ENERGY STAR: The Government requires that certain equipment be Energy Star compliant. Initially, the sole Energy Star requirement shall be the self certification by the bidder that the specified equipment is Energy Star compliant. Within 3 months of the availability of an EPA sanctioned test for Energy Star compliance, the Contractor shall submit all equipment upgrades and additions for testing and provide proof of compliance to the Government upon completion of testing. Testing shall be at the Contractor's expense.

SC-23. RECOVERED MATERIALS: The Corps of Engineers encourages all bidders to utilize recovered materials to the maximum extent practicable. The attached APPENDIX R contains procurement guidelines for products containing recovered materials.

SC-24. PROPRIETARY REFERENCES: All items specified in Sections 00820 or 00890 on a brand name basis are to indicate the general type desired based on level of quality, and are not intended to restrict selection to products of any particular manufacturer.

APPENDIX R

PART 247 - COMPREHENSIVE PROCUREMENT GUIDELINE FOR PRODUCTS CONTAINING RECOVERED MATERIALS

40 CFR Ch. 1 (9-1-99 Edition)

Subpart B-Item Designations

§ 247.10 Paper and paper products.

Paper and paper products, excluding building and construction paper grades.

§ 247.11 Vehicular products.

- (a) Lubricating oils containing re-refined oil, including engine lubricating oils, hydraulic fluids, and gear oils, excluding marine and aviation oils.
- (b) Tires, excluding airplane tire
- (e) Reclaimed engine coolants, excluding coolants used in non-vehicular applications.

247.12 Construction products.

- (a) Building insulation product including the following items:
 - (1) Loose-fill insulation, including but not limited to cellulose fiber, mineral fibers (fiberglass and rock vermiculite, and perlite;
 - (2) Blanket and batt insulation, including but not limited to mineral fibers (fiberglass and rock wool).
 - (3) Board (sheathing, roof decking wall panel) insulation, including but not limited to structural fiberboard and laminated paperboard products perlite composite board, polyurethane, polyisocyanurate, polystyrene, phenolics, and composites; and
 - (4) Spray-in-place insulation, including but not limited to foam-in-place polyurethane and polyisocyanurate and spray-on cellulose.
- (b) Structural fiberboard and laminated paperboard products for applications other than building insulation, including building board, sheathing shingle backer, sound deadening board, roof insulating board, insulating wallboard, acoustical and non-acoustical ceiling tile, acoustical and non-acoustical lay-in panels, floor underlayments, and roof overlay (cover board).
- (c) Cement and concrete, including concrete products such as pipe and block, containing coal fly as ground granulated blast furnace (GGBF) slag.
- (d) Carpet made of polyester fiber use in low- and medium-wear applications.
- (e) Floor tiles and patio block containing recovered rubber or plastic.
- (f) Shower and restroom dividers/partitions containing recovered plastic or steel.
- (g) (1) Consolidated latex paint used for covering graffiti; and
- (2) Reprocessed latex paint used for interior and exterior architectural applications such as wallboard, ceilings, and trim; gutter boards; and concrete, stucco, masonry, wood and metal surfaces.

§247.13 Transportation products.

- (a) Traffic barricades and traffic cones used in controlling or restricting vehicular traffic.
- (b) Parking stops made from concrete or containing recovered plastic or rubber.
- (c) Channelizers containing recovered plastic or rubber.
- (d) Delineators containing recovered plastic, rubber, or steel.
- (e) Flexible delineators containing recovered plastic.

§ 247.14 Park and recreation products

- (a) Playground surfaces and running tracks containing recovered rubber or plastic.
- (b) Plastic fencing containing recovered plastic for use in controlling snow or sand drifting and as a warning/safety barrier in construction or other applications.

247.15 Landscaping products.

- (a) Hydraulic mulch products containing recovered paper or recovered wood used for hydroseeding and as an over-spray for straw mulch in landscaping, erosion control, and soil reclamation.
- (b) Compost made from yard trimmings, leaves, and/or grass clippings for use in landscaping, seeding of grass or other plants on roadsides and embankments, as a nutritious mulch under trees and shrubs, and in erosion control and soil reclamation.
- (c) Garden and soaker hoses containing recovered plastic or rubber.
- (d) Lawn and garden edging containing recovered plastic or rubber.

§ 247.16 Non-paper office product.

- (a) Office recycling containers and office waste receptacles.
- (b) Plastic desktop accessories.
- (c) Toner cartridges.
- (d) Binders.
- (e) Plastic trash bags.
- (f) Printer ribbons.
- (g) Plastic envelopes.

§ 247.17 Miscellaneous products.

Pallets containing recovered wood, plastic, or paperboard.

END OF SECTION

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ATTACHMENT A
INDEX OF RFP DRAWINGS

Electrical Power Line Upgrade,
Howard Hanson Dam,
Green River, Washington

DRAWING NO. E-56-41-24

SHEET NUMBER	PLATE NUMBER	TITLE	REVISION NUMBER	DATE
1	G-1	Title and Area Maps		31 OCT03
2	E-1	Power Line I		31 OCT03
3	E-2	Power Line II		31 OCT03
4	E-3	Power Line III		31 OCT03
5	E-4	Enlarged Site I		31 OCT03
6	E-5	Enlarged Site II		31 OCT03
7	E-6	Details I		31 OCT03
8	E-7	One Line Diagram and Details		31 OCT03

REVISIONS TO RFP DRAWINGS

SHEET 2:

Replace Note 1 with: "THE CONTRACTOR SHALL DESIGN AND CONSTRUCT COMPLETE NEW OVERHEAD DISTRIBUTION SYSTEM. THE ALIGNMENT OF THE NEW OVERHEAD DISTRIBUTION SYSTEM SHALL FOLLOW THE PATH OF THE EXISTING OVERHEAD DISTRIBUTION SYSTEM AS CLOSE AS POSSIBLE. THE GOVERNMENT HAS A RIGHT OF WAY EXTENDING APPROXIMATELY 200 FEET ON EITHER SIDE OF THE EXISTING OVERHEAD LINE."

Note 3: Delete

Note 4 - replace note with the following: "EXISTING OVERHEAD LINES AND POLES ARE THE PROPERTY OF THE U.S. ARMY FROM THE EXISTING UTILITY METER TO THE LAST POLE AT THE ADMINISTRATION BUILDING. POLE MOUNTED UTILITY METER IS DEMARCATION BETWEEN U.S. ARMY OWNERSHIP AND PUGET SOUND ENERGY. NEW OVERHEAD DISTRIBUTION SYSTEM SHALL BEGIN AT THE ELECTRIC METER LOCATED 0.65 MILES DOWNSTREAM (NORTHWEST) OF THE POLE LOCATED ON PLAN (BY "SEE NOTE 4" CALLOUT PROXIMAL TO CITY OF TACOMA WATER SUPPLY HEADWORKS AND DAM). COORDINATE METERING REQUIREMENTS WITH PSE. POLES ALSO SUPPORT QWEST COMMUNICATIONS CABLES. COORDINATE REMOVAL AND RELOCATION OF THESE LINES WITH QWEST."

REVISIONS TO RFP DRAWINGS (Cont.)

SHEET 2: (Cont.)

Note 5 - replace note with the following: "POWER LINE FROM THE EXISTING UTILITY METER (LOCATION DESCRIBED UNDER NOTE 4) TO THE CUMBERLAND SUBSTATION IS PROPERTY OF PUGET SOUND ENERGY.

SHEET 3:

Note 2: Delete

SHEET 4:

Note 2: Delete

SHEET 5:

General Notes

1. Delete

SECTION 00890
OUTLINE SPECIFICATIONS
TABLE OF CONTENTS

PARAGRAPH NO.	PARAGRAPH TITLE
1.0	GENERAL
2.0	SPECIFICATIONS
	Division 2: Sitework
	Divisions 3: through 15 :Not Used
	Division 16: Electrical

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SECTION 00890

OUTLINE SPECIFICATIONS

1.0 GENERAL

a. Purpose

The outline specifications listed hereinafter generally cover the range of products/work to be included in the project. The goals are:

- To indicate the areas of work in this project.
- To broadly indicate the work within each section.
- To indicate minimum acceptable requirements and to further detail the minimum requirements.
- To indicate a required or pertinent part of a specific guide specification.

These outline specifications do not attempt to address product approval, shop drawings, actual installation, or other items covered in the referenced specifications.

b. Prescriptive Requirements

Where a referenced UFGS section outline narrative contains specific edited or annotated passages from the guide section or other criteria which precludes use of other alternate choice(s) within the guide specification section this prescriptive requirement shall be mandatory and the other respective choices, materials or products shall be deleted from the specification requirements.

c. Editing of Guide Specifications

Refer to Section 00820 STATEMENT OF WORK under Attachment 1, Technical Specifications for procedure for incorporating the guide specifications into the contract documents.

2.0 SPECIFICATIONS

Guide specifications listed below and identified by TM, TI, or UFGS are available as specified herein. (Where more than one version of a UFGS is available, use the Army version, usually identified with an "A" at the end of the section number.) These specifications are issued by the Office of the Chief of Engineers. The Contractor is to be aware that these specifications represent the latest versions available at the time of issue of this RFP and are to be used in preparing specifications for this project. Specifications are available in electronic format where noted below.

- Uniform Facility Guide Specifications (UFGS).

<http://www.ccb.org/docs/ufgshome/UFGSToc.htm>

DIVISION 2: SITEWORK

02220 Demolition

All demolition work shall conform to EM 385-1-1 U.S. Army Corps of Engineers Safety and Health Requirements Manual. Work includes demolition, removal, and disposal of all existing distribution system materials. Burning and explosives shall not be permitted. Equipment and labor necessary to safely demolish and remove the existing aerial distribution system shall be provided.

02231 Clearing and Grubbing

The Contractor shall dispose of all organic material other than saleable timber resulting from clearing operations by one or more of the following methods:

a. Waste Site. Debris shall be disposed of at a legal location outside of Government-controlled land. Contractor shall obtain approval of haul route and disposal site.

b. Chipping. Chipping of woody matter shall be done by machines. Wood chips larger than 6 square inches and thicker than 1/2 inch shall be disposed of in accordance with paragraph "a. Waste Site." Smaller sized woody matter may be disposed of by spreading the chips uniformly over selected areas within the project right of way, as directed, in loose layers not more than 3 inches in thickness.

Cut off flush with or below the original ground surface trees, stumps, roots, brush, and other vegetation in areas to be cleared, except for trees and vegetation indicated or directed to be left standing.

Grubbing will not be required in cleared areas.

All timber except saleable timber removed from the project site shall become the property of the Contractor. Saleable timber shall conform to the following specification:

Saleable Timber (Para 3.6.1)

Consider felled timber from which saw logs and fuelwood can be produced as saleable timber. Sawlogs and fuelwood will remain the property of either the Government or City of Tacoma, depending on location within the project right of way. This saleable timber shall be stockpiled on sites in areas free of debris where it does not interfere with the construction project and will be accessible (within 50 feet of the road) at a later date.

Logs shall be sorted by size and placed in separate decks for sawlogs and fuelwood. Trees shall be cut from the stump and limbed to the top before decking. Whenever possible logs shall be left in tree length. If trees are too large to be handled tree length, cut 40-foot logs plus 12 inches trim allowance from the butt. The minimum size for a sawlog is 6 inches Diameter Inside Bark (DIB) on the small end and 16 foot in length. All logs not suitable for sawlogs shall be placed in a fuelwood deck. The minimum size for a fuelwood log is 5 inches diameter on the large end and 8 feet in length.

02231 Clearing and Grubbing (Cont.)

Roads and Utility Lines;

Roads shall be kept free of debris at all times. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Existing utility lines shall be protected from damage until the new line begins supplying power to the project. Notify the Contracting Officer immediately of damage to or an encounter with an unknown existing utility line. The Contractor shall be responsible for the repairs of damage to existing utility lines that are indicated or made known to the Contractor prior to start of clearing and grubbing operations.

02316 Excavation, Trenching, and Backfilling for Utility Systems

The Contractor shall perform excavation, preparation of pipe-laying surface, pipe bedding, backfilling and compaction for underground electrical conduit.

Add the following paragraph for excess and waste material from excavations:

1.5 UTILIZATION OF EXCAVATED MATERIALS

Excess and unsatisfactory materials removed from trenching/excavations which cannot be used as backfill shall be hauled to a Government furnished disposal area which is located 2.2 miles upstream from the dam. Disposal is limited to native materials excavated (i.e. soil). All construction debris and trash is to be properly disposed of off-site by the Contractor

DIVISION 16: ELECTRICAL

16263 Diesel-Generator Set Stationary 100 – 2500kW, with Auxiliaries

SYSTEM DESCRIPTION

500 kW engine-generator set shall be provided and installed complete and totally functional, with all necessary ancillary equipment to include: air filtration; starting system; electrical system, protection and isolation; fuel system; cooling system; and engine exhaust system. This engine-generator set shall satisfy the requirements specified in the Engine-Generator Parameter Schedule.

Engine Generator Parameter Schedule

Power Rating	Industrial
Standby Rating	500 kW /625 kVA
Primary Rating	425 kW / 531.25 kVA
Power Factor	0.8 lagging
Engine-Generator Applications	stand-by power

16263 Diesel-Generator Set Stationary 100 – 2500kW, with Auxiliaries (Cont.)

Maximum Speed	1800 rpm
Heat Exchanger Type	fin-tube (radiator)
Governor Type	Electric Isochronous
Frequency	60 Hz
Voltage	480 volts
Phases	3 Phase, Wye

MATERIAL AND INSTALLATION

Engine-Generator Set Enclosure

The engine-generator set enclosure shall be corrosion resistant and fully weather resistant. The enclosure shall contain all set components and provide ventilation to permit operation at Service Load under secured conditions. Doors shall be provided for access to controls and equipment requiring periodic maintenance or adjustment. Removable panels shall be provided for access to components requiring periodic replacement. The enclosure shall be capable of being removed without disassembly of the engine-generator set or removal of components other than the exhaust system. The enclosure shall reduce the noise of the generator set to within the limits specified in the paragraph SOUND LIMITATIONS

Fuel Consumption

Engine fuel consumption shall be rated at 100% of Power Rating.

Size Range Net kW	% of Rated Output Capacity	Fuel Usage LBS./kWH
300 - 999	75 and 100	0.575
	50	0.600

Engine

The engine shall operate on No. 2-D diesel fuel conforming to ASTM D 975, shall be designed for stationary applications and shall be complete with ancillaries. The engine shall be a standard production model described in the manufacturer's catalog. The engine shall be naturally aspirated, turbocharged - aftercooled. The engine shall be 2-cycle and compression-ignition type. The engine shall be vertical in-line, V- or opposed-piston type, with a solid cast block or individually cast cylinders. Each block shall have a coolant drain port. The engine shall be equipped with an overspeed sensor.

16263 Diesel-Generator Set Stationary 100 – 2500kW, with Auxiliaries (Cont.)

Integral Main Fuel Storage Tank

The engine shall be provided with an integral main fuel tank. The tank shall be factory installed and provided as an integral part of the diesel generator manufacturer's product. The tank shall be provided with connections for fuel supply line, fuel return line, local fuel fill port, gauge, vent line, and float switch assembly. A fuel return line cooler shall be provided as recommended by the manufacturer and assembler. The temperature of the fuel returning to the tank shall be below the flash point of the fuel. The engine-generator set provided with weatherproof enclosures shall have its tank mounted within the enclosure. The fuel fill line shall be accessible without opening the enclosure.

Capacity

The tank shall have capacity of 38 gallons per hour to supply fuel to the engine for an uninterrupted 24 hour period at 100% rated load without being refilled.

Sound Limitations

The noise generated by the installed diesel generator set operating at 100 percent load shall not exceed the following sound pressure levels in any of the indicated frequencies when measured at a distance of 23 feet (7 meter) from the end of the exhaust and air intake piping directly along the path of intake and discharge for horizontal piping.

Frequency Band (Hz)	Maximum Acceptable Pressure Level (Decibels)
63	85.7dBA

AUTOMATIC TRANSFER SWITCH

Fully automatic operation shall be provided for engine-generator set starting and load transfer upon loss of normal source. Transfer switch shall be provided as part of the generator set and shall be in accordance with Section 16410 AUTOMATIC TRANSFER SWITCH AND BY-PASS/ISOLATION SWITCH.

16370 Electrical Distribution System, Aerial

FIELD TESTS

General

Field testing shall be performed in the presence of the Contracting Officer. The Contractor shall notify the Contracting Officer 10 days prior to conducting tests. The Contractor shall furnish materials, labor, and equipment necessary to conduct field tests. The Contractor shall perform tests and inspections recommended by the manufacturer unless specifically waived by the Contracting Officer. The Contractor shall maintain a written record of tests, which includes date, test performed, personnel involved, devices tested, serial number and name of test equipment, and test results. Field reports will be signed and dated by the Contractor.

Ground-Resistance Tests
Operating Tests
Sag and Tension Test
Pre-energization Services
 Reclosures
 Switches

MATERIALS AND INSTALLATION

Wood Poles;

Wood poles shall comply with ANSI O5.1, and shall be pressure treated in accordance with AWPAC4. Creosote preservatives shall not be used. Poles less than 50 feet in length, or classes 6 through 10, shall not be installed. Provision for communication services is required on the pole line. A vertical pole space of not less than 2 feet shall be reserved at all locations.

Conductors;

Medium-voltage line conductors of the Spacer Cable-Tree Wire type shall be used; they shall be of the factory-assembled, messenger-supported type, having a rated circuit voltage of 15kV. Insulation shall be cross-linked thermosetting polyethylene (XLP) or approved equivalent conforming to all applicable ICEA specifications. Messengers shall be zinc-coated steel, aluminum-clad-steel, copper-clad-steel, or composite-copper and copper-clad steel. Conductor material shall be AAC, AAAC, or ACSR. Conductors shall be installed in accordance with manufacturer's approved tables of sags and tensions.

Aluminum materials;

Aluminum shall not be used in contact with earth or concrete. Connectors and splices shall be of copper alloys for copper conductors, aluminum alloys for aluminum-composition conductors, and a type designed to minimize galvanic corrosion for copper to aluminum-composition conductors.

Crossarms;

Crossarms shall comply with RUS Bull 1728H-701 and shall be solid wood, distribution type, except cross-sectional area with pressure treatment conforming to AWPAC25, and a 1/4 inch, 45-degree chamfer on all top edges. Cross-sectional area minimum dimensions shall be 4-1/4 inches in height by 3-1/4 inches in depth in accordance with IEEE C2 for Grade B construction. Crossarms shall be not less than 8 feet in length.

16370 Electrical Distribution System, Aerial (Cont.)**Medium-Voltage Line Insulators;**

Insulators shall comply with NEMA HV 2 for general requirements. Suspension insulators shall be used at corners, angles, dead-ends, and other areas where line insulators do not provide adequate strength. Where angles are greater than 15 degrees, provide double-arm with dead-end insulator construction.

Guy Assemblies;

No more than two strengths of guys should be used on the project, and all guys will be sized for the maximum loading tension of the line wherever conductor tensions are not balanced, such as at angles, corners, and dead-ends. Any pole where the angle of deviation of the line exceeds five degrees will be guyed. Where a single guy will not provide the required strength, or more guys shall be provided. The maximum permitted angle of deviation for a single angle guy installation (one guy installed on the bisect of line angle) is 45 degrees. For greater angles, a down guy installation in line with each direction of pull is required.

Pole Line Hardware;

Pole-line hardware shall be hot-dip galvanized steel.

Grounding and Bonding;

Ground rods shall be 3/4 inch in diameter by 10 feet in length of the sectional type driven full length into the earth. The maximum resistance of a driven ground rod shall not exceed 25 ohms under normally dry conditions. Non-current-carrying metal parts of equipment and conductor assemblies, such as medium-voltage cable terminations and messengers, operating mechanisms of pole top switches, panel enclosures, recloser frames (cases) and other non-current-carrying metal items shall be grounded. Additional grounding of equipment, neutral, and surge arrester grounding systems shall be installed at poles in accordance with IEEE C2.

Recloser;

Automatic circuit reclosers shall comply with IEEE C37.60 and shall be vacuum type, complete with devices, attachments, and accessories required for installation and operation and shall be suitable for mounting on a single pole. Reclosures shall be equipped with ground fault tripping equipment. Surge arrester protection shall be provided. Reclosure shall be installed after the metering equipment. Recloser installation shall be in accordance with manufacturer's requirements.

Group-Operated Load Interrupter Switch;

Manually operated load interrupter switch shall comply with ANSI C37.32 and shall be of the outdoor, manually-operated, three-pole, single-throw type. Switch shall be non-fused and shall be complete with necessary operating mechanisms, handles, and other items required for manual operation from the ground. Switch shall be installed after the recloser and in accordance with manufacturer's requirements.

Surge Arrester;

Surge Arresters shall comply with NEMA LA1 and IEEE C62.1, IEEE C62.2, and IEEE C62.11, and shall be provided for protection of aerial-to-underground transitions and automatic circuit reclosers. Surge Arresters shall be properly sized for equipment protection.

16370 Electrical Distribution System, Aerial (Cont.)

Connections Between Aerial and Underground Systems;
Underground cables shall be extended up poles in conduit to cable terminations. Cables shall be supported by devices separate from the conduit near their point of exit from the riser conduit. Risers shall be equipped with bushings to protect cables.

Connections To Utility Lines;
Contractor shall coordinate all work related to the connection of the new lines to the existing overhead lines owned by Puget Sound Energy. Contractor shall be responsible for all fees associated with this work.

16375 Electrical Distribution System, Underground

FACTORY TESTS

Factory tests shall be performed, as follows, in accordance with the applicable publications and with other requirements of these specifications. The Contracting Officer shall be notified at least 10 days before the equipment is ready for testing

Transformers: Manufacturer's standard routine, design and other tests in accordance with IEEE C57.12.00.

Transformers rated 200 kVA and above: Reduced full-wave, chopped-wave, and full-wave impulse test on each line and neutral terminal, in accordance with IEEE C57.98.

FIELD TESTS

General;
Field testing shall be performed in the presence of the Contracting Officer. The Contractor shall notify the Contracting Officer 10 days prior to conducting tests.

Medium-Voltage Preassembled Cable Test;
After installation, prior to connection to an existing system, and before the operating test, the medium-voltage preassembled cable system shall be given a high potential test. Direct-current voltage shall be applied on each phase conductor of the system by connecting conductors at one terminal and connecting grounds or metallic shieldings or sheaths of the cable at the other terminal for each test. Prior to the test, the cables shall be isolated by opening applicable protective devices and disconnecting equipment. The method, voltage, length of time, and other characteristics of the test for initial installation shall be in accordance with NEMA WC 74 for the particular type of cable installed, and shall not exceed the recommendations of IEEE Std 404 for cable joints unless the cable and accessory manufacturers indicate higher voltages are acceptable for testing. Should any cable fail due to a weakness of conductor insulation or due to defects or injuries incidental to the installation or because of improper installation of cable, cable joints, terminations, or other connections, the Contractor shall make necessary repairs or replace cables as directed. Repaired or replaced cables shall be retested.

16375 Electrical Distribution System, Underground (Cont.)**MATERIALS AND INSTALLATION****Cable Terminating Cabinet;**

Cable terminating cabinets shall be pad-mounted, hook-stick operable, deadfront construction conforming to the requirements of IEEE ANSI/IEEE C37.20.3, Category A. Cabinets shall be provided with 200A loadbreak junctions and elbow-type separable loadbreak connectors, cable parking stands, and grounding lugs.

Cables;

Medium voltage cables shall be soft drawn copper, single conductor type, Type MV rated for 15kV and shall have EPR insulation with 133 percent insulation level. Cables shall be rated for use in duct applications. Neutral conductors shall be of the same materials as the phase conductors.

Conduit and Ducts;

Concrete encased medium voltage ducts shall be Schedule 40; direct buried ducts and risers shall be Schedule 80. Ducts placed in roads shall be concrete encased.

Surge Arrester;

Surge Arresters shall comply with NEMA LA1 and IEEE C62.1, IEEE C62.2, and IEEE C62.11, and shall be provided for protection of aerial-to-underground transitions and transformers.

Surge Arresters shall be properly sized for equipment protection.

Transformer;

Contractor shall provide two pad-mounted transformers. Each transformer shall be compartmental type, self-cooled, tamper resistant, loop-feed type suitable for use outdoors. The primary shall be dead-front construction with loadbreak switching; oil-immersed, current-limiting, bayonet-type fuses; medium-voltage separable loadbreak connectors; and surge arresters. It shall be of the sealed tank construction. Transformers shall have four 2-1/2 percent rated kVA high-voltage taps, two above and two below rated primary voltage. A tap changing mechanism shall be provided for accurate voltage adjustment without opening the transformer tank. The transformers shall be rated as follows:

KVA: 500KVA

Phase: 3-phase

Frequency: 60 Hz

Temp. Rise: 60° C

Primary Voltage: 12470V-Delta

Primary BIL: 95kV

Secondary Voltage: 480-Wye

Secondary BIL: 95kV

Percent Impedance Voltage: 4.0

Coolant: Insulating oil

16375 Electrical Distribution System, Underground (Cont.)

KVA: 75KVA
Phase: 3-phase
Frequency: 60 Hz
Temp. Rise: 60° C
Primary Voltage: 12470V-Delta
Primary BIL: 95kV
Secondary Voltage: 208-Wye
Secondary BIL: 95kV
Percent Impedance Voltage: 4.0
Coolant: Insulating oil

The transformer shall comply with the latest applicable standards of the National Electrical Manufacturers Association (NEMA) and the American National Standards Institute (ANSI).

Liquid Dielectrics;

Liquid dielectrics for transformers shall be non-polychlorinated biphenyl (PCB) mineral-oil or less-flammable liquid. Nonflammable fluids shall not be used. Tetrachloroethylene (perchloroethylene) and 1, 2, 4 tetrachlorobenzene fluids shall not be used. Transformer dielectric shall be less than 2 ppm PCB content.

Grounding and Bonding;

A ground ring consisting of bare copper conductors and ground rods shall be installed around pad-mounted equipment. Ground rods shall be installed at all manholes. Ground rods shall be 3/4 inch in diameter by 10 feet in length of the sectional type driven full length into the earth. The maximum resistance of any grounding system shall not exceed 25 ohms under normally dry conditions. Non-current-carrying metal parts of equipment, manholes, and conductor assemblies shall be grounded.

Connections To Buildings;

Underground cables shall be extended to the buildings and shall be connected to the first applicable termination point in each building. Exterior conduits shall interface with the stubout of the building's conduit system 5 feet outside the building.

16410 Automatic Transfer Switch and By-Pass/Isolation Switch

The Automatic Transfer Switch shall be electrically operated and mechanically held in both operating positions. It shall be suitable for use in standby systems and shall be provided as a component of the engine-generator-set.

16475 Coordinated Power System Protection

END OF SECTION